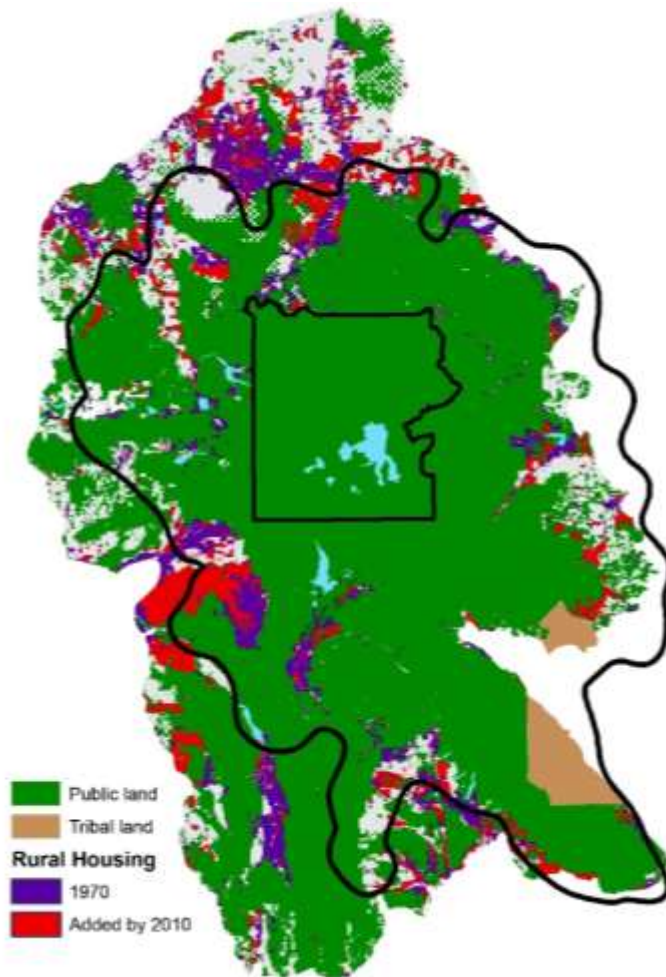


Changing mortality trends in the Greater Yellowstone Ecosystem



Development and future projections

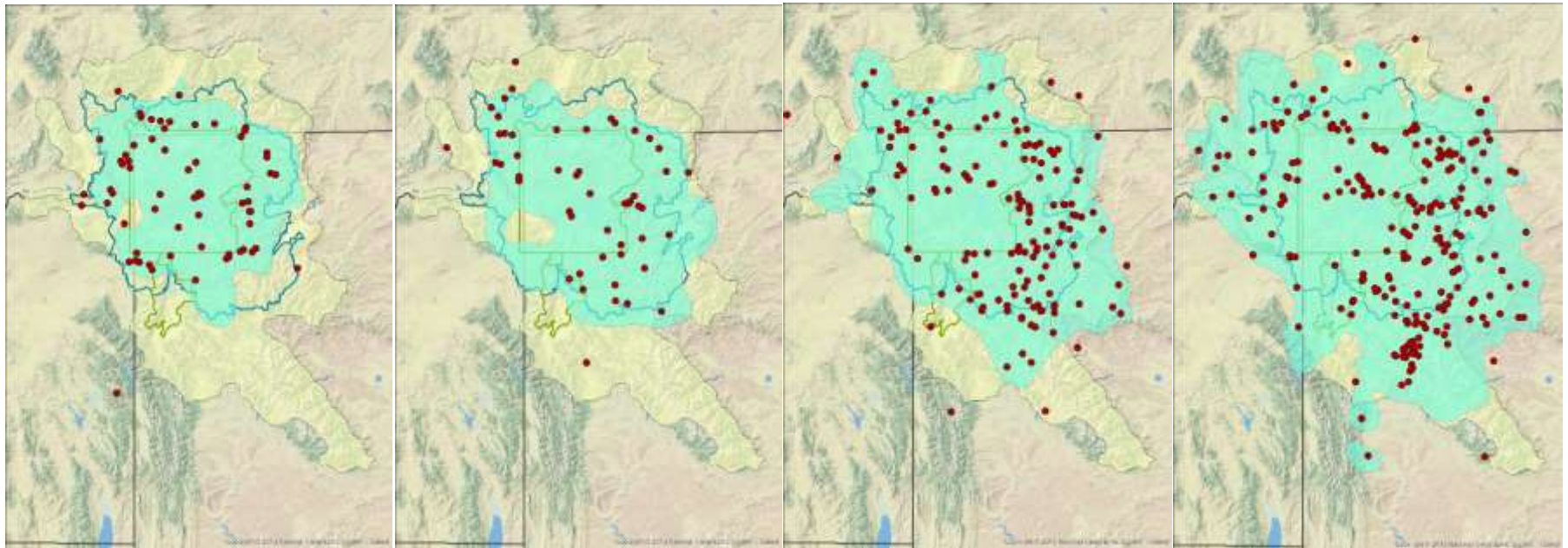


“....human population has **doubled**, and housing density has **tripled** in the GYE since 1970 and both are projected to **double** again by 2050. Human development is now estimated to cover 31% of the GYE.”

Source: McIntyre and Ellis (2011)

Source: Hansen and Phillips (2018)

Occupied ranges and documented mortalities 1975-2014



1975 - 1984

1985 - 1994

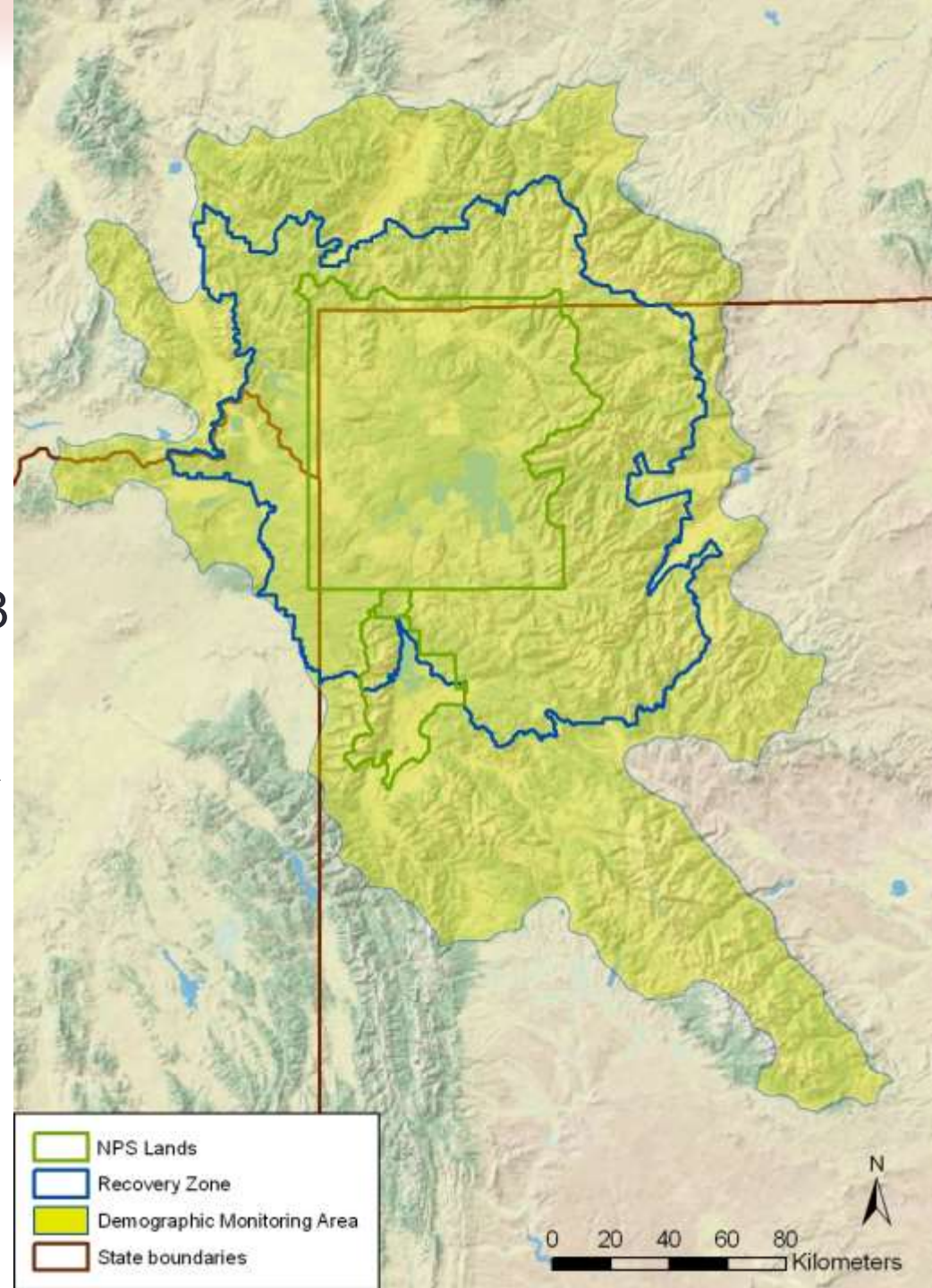
1995 - 2004

2005 - 2014

This information is preliminary and is subject to revision. It is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information

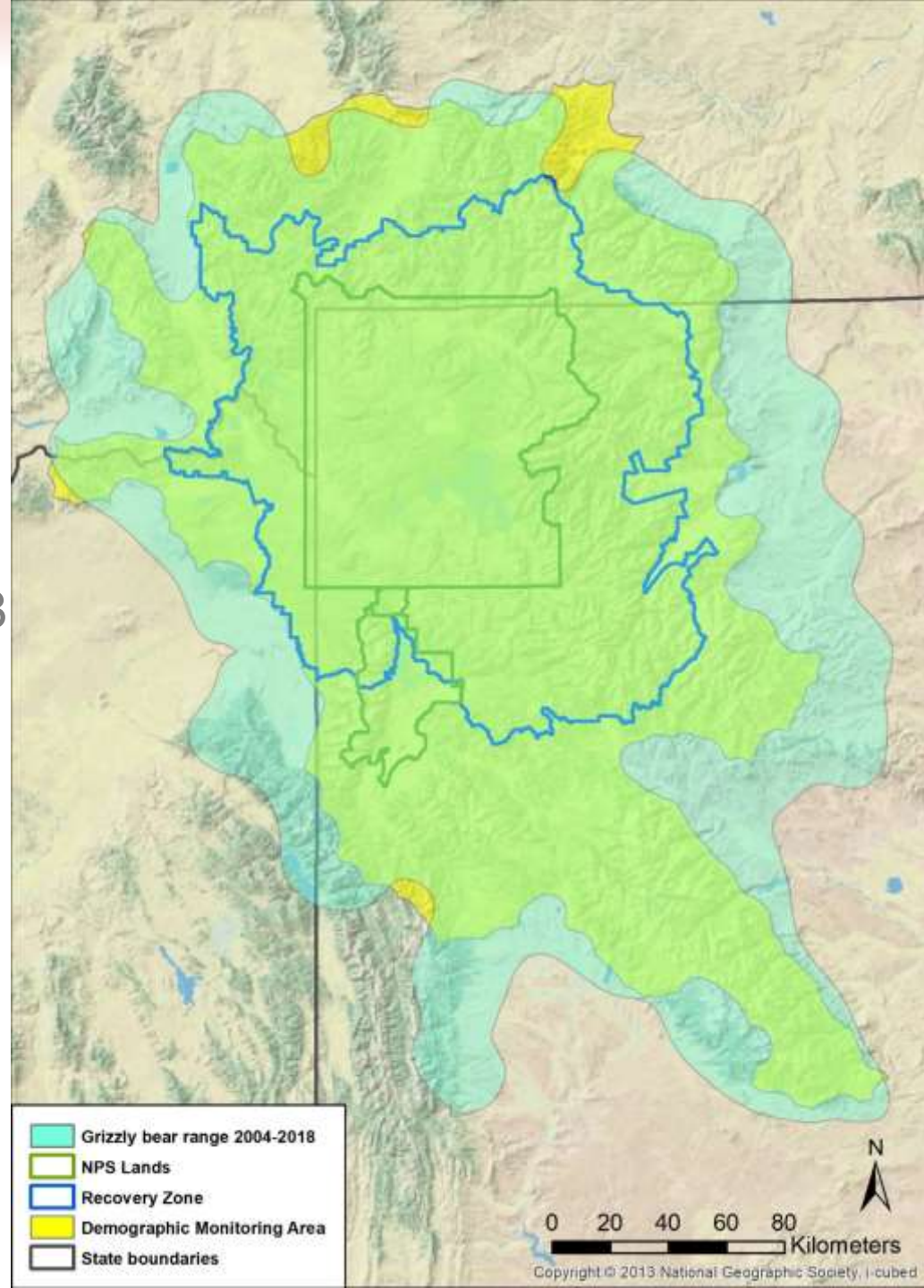
Greater Yellowstone Ecosystem

- National Parks = 10,344 km²
- Primary Conservation Area/Recovery Zone = 23,828 km²
- Demographic Monitoring Area (DMA) = 49,931 km²

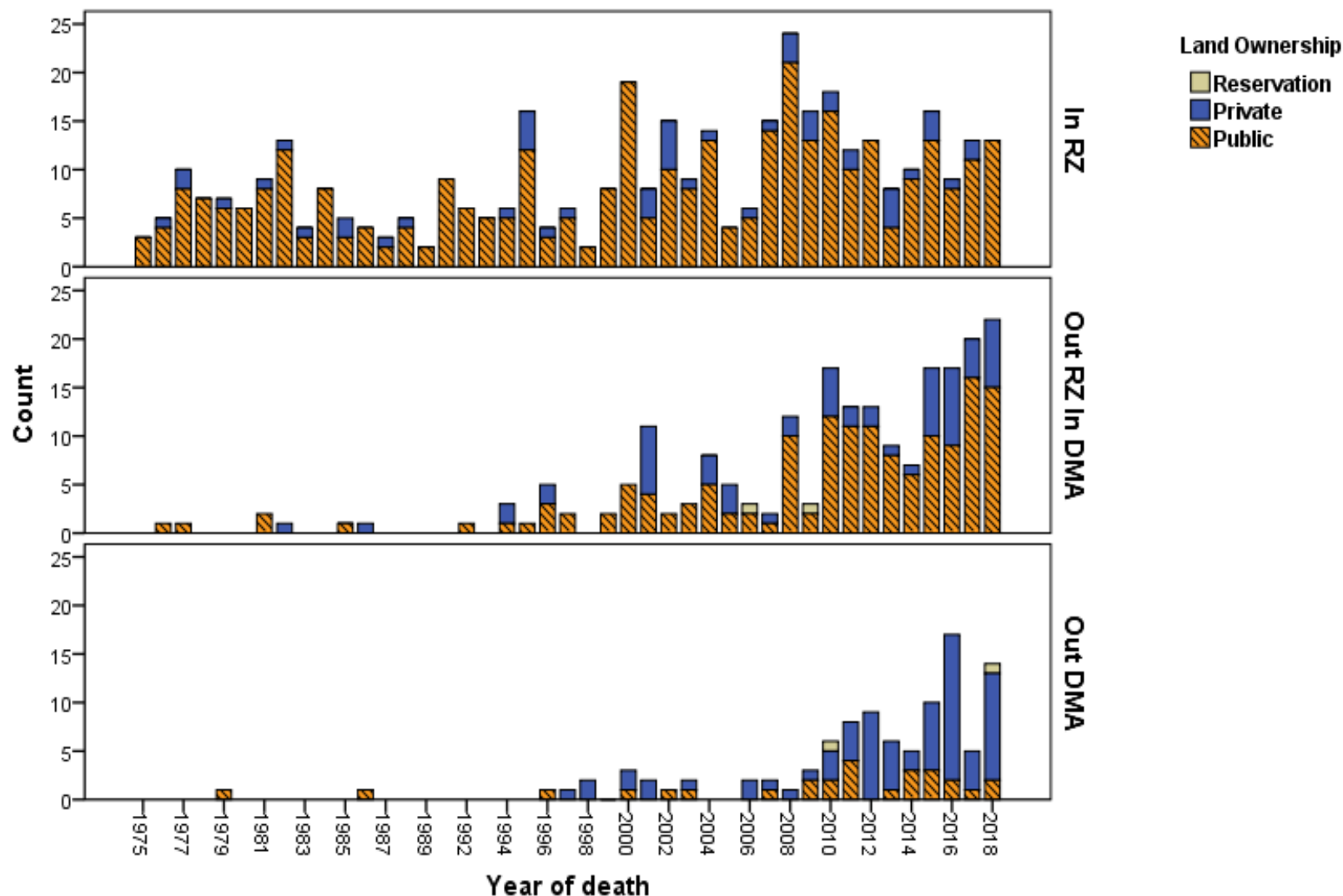


Greater Yellowstone Ecosystem

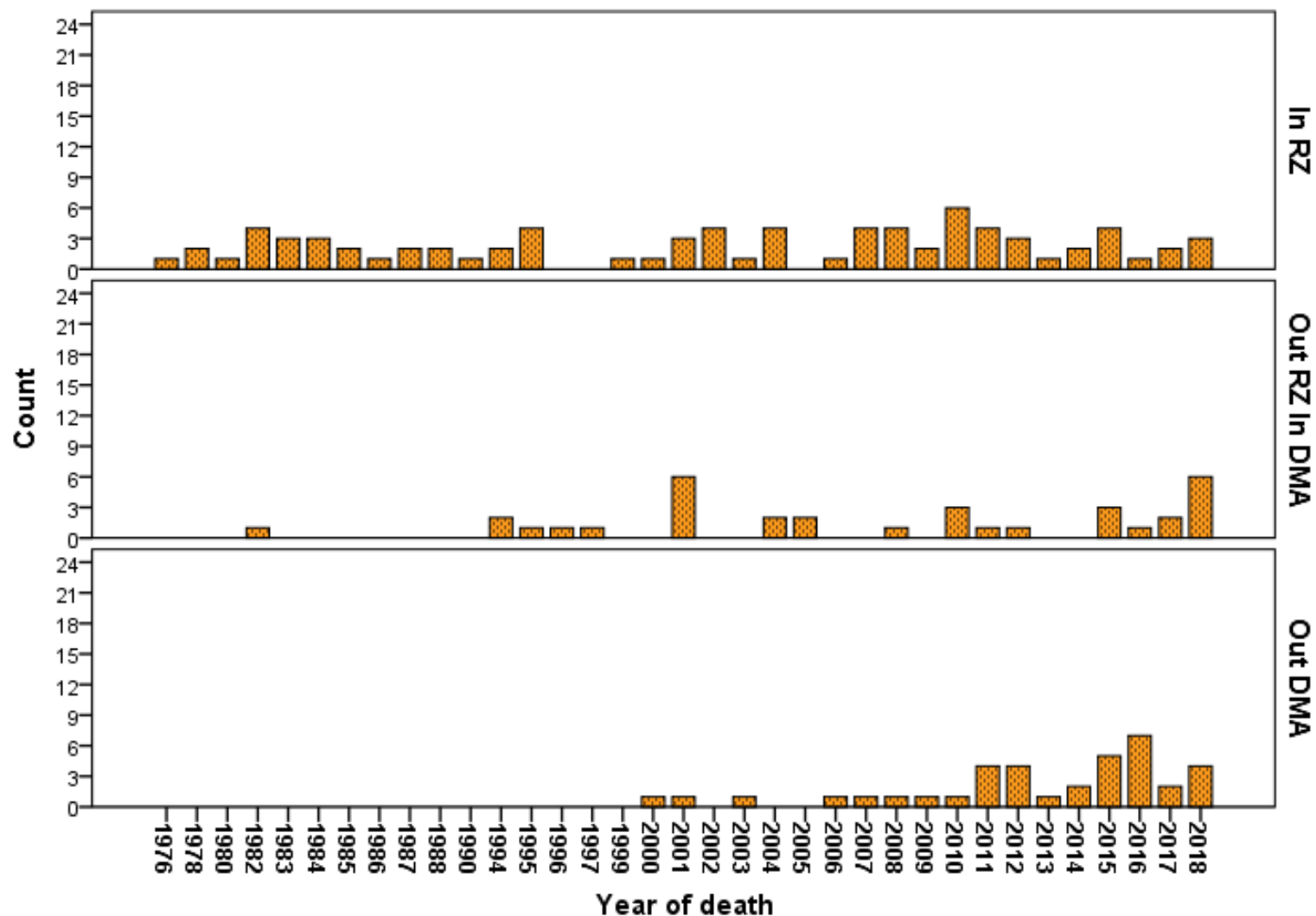
- National Parks = 10,344 km²
- Primary Conservation Area/Recovery Zone = 23,828 km²
- Demographic Monitoring Area (DMA) = 49,931 km²
- Occupied range (2004-2018) = 68,736 km²



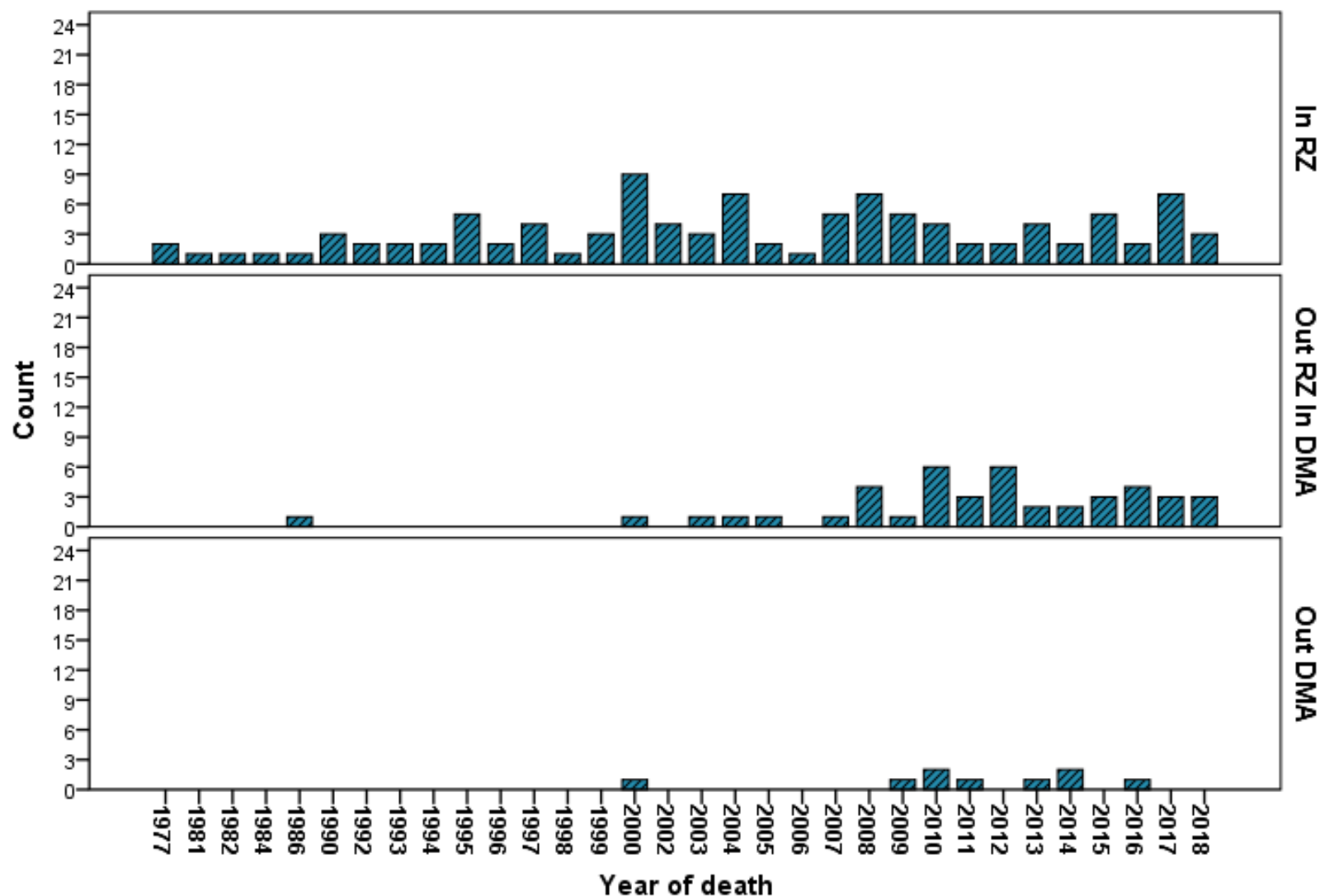
Documented mortalities and landownership 1975-2018



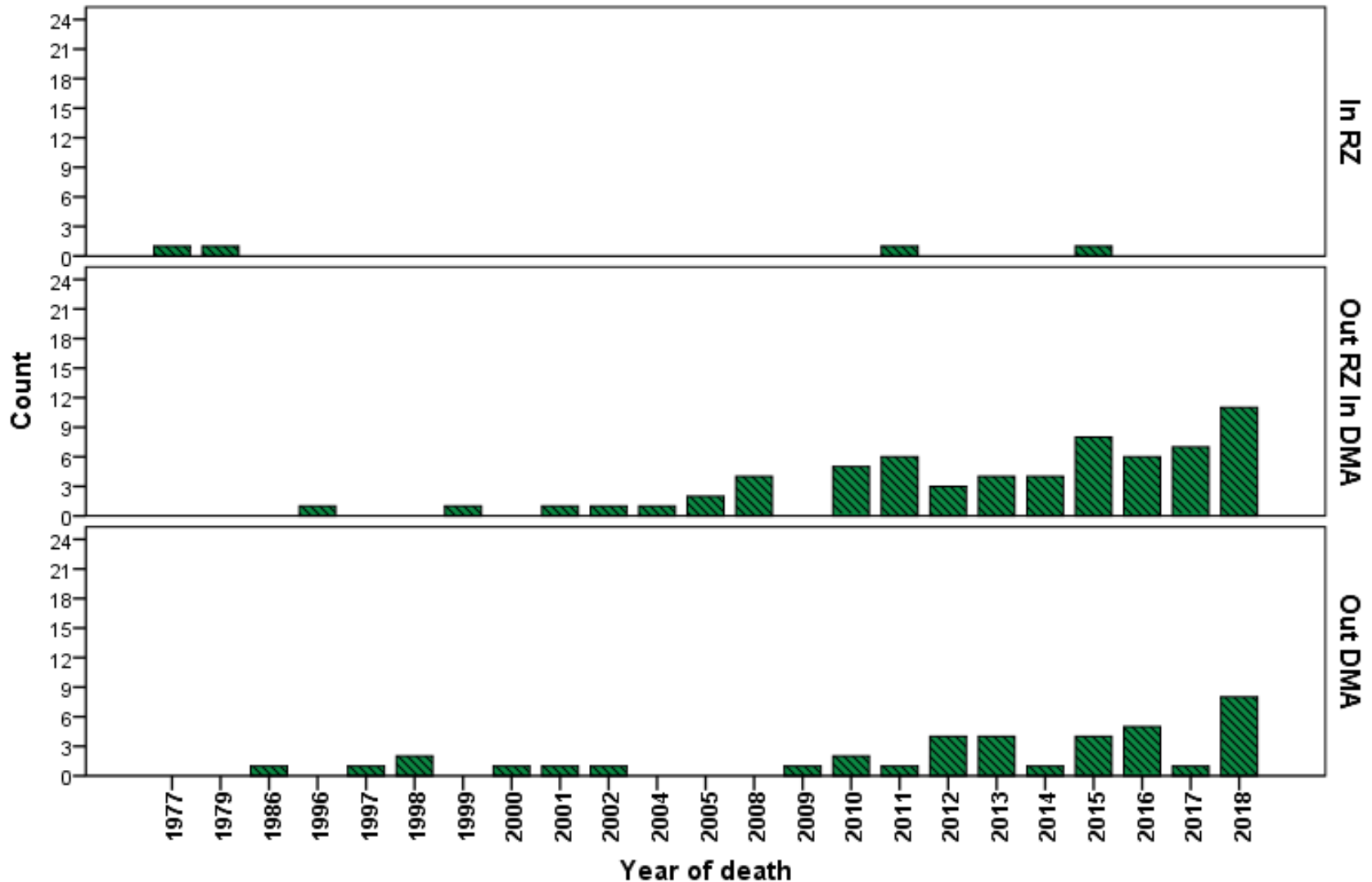
Mortality from site conflicts 1975-2018



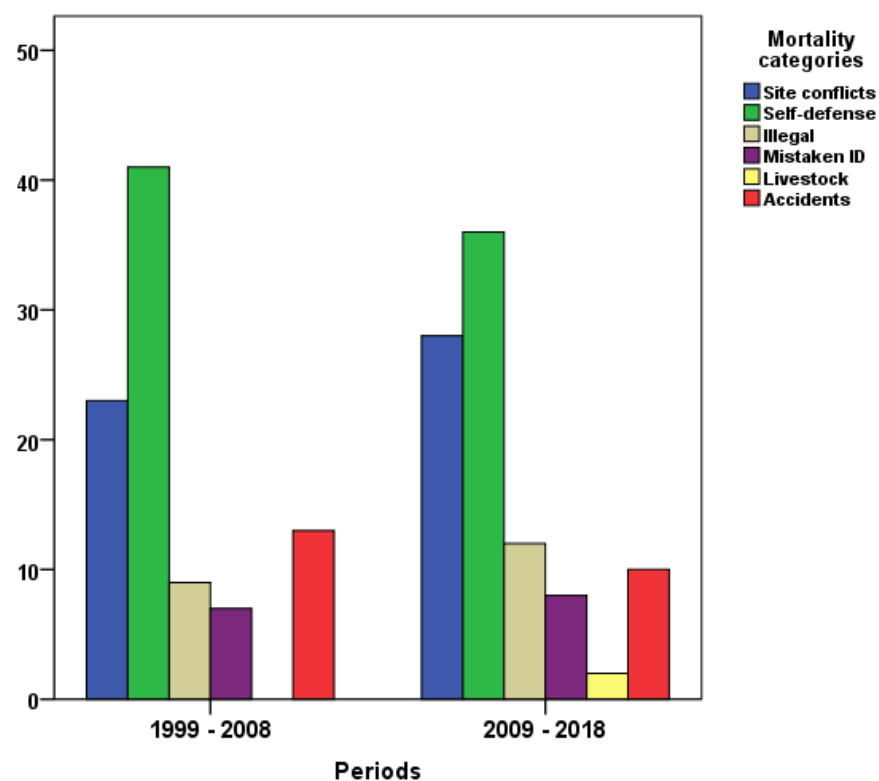
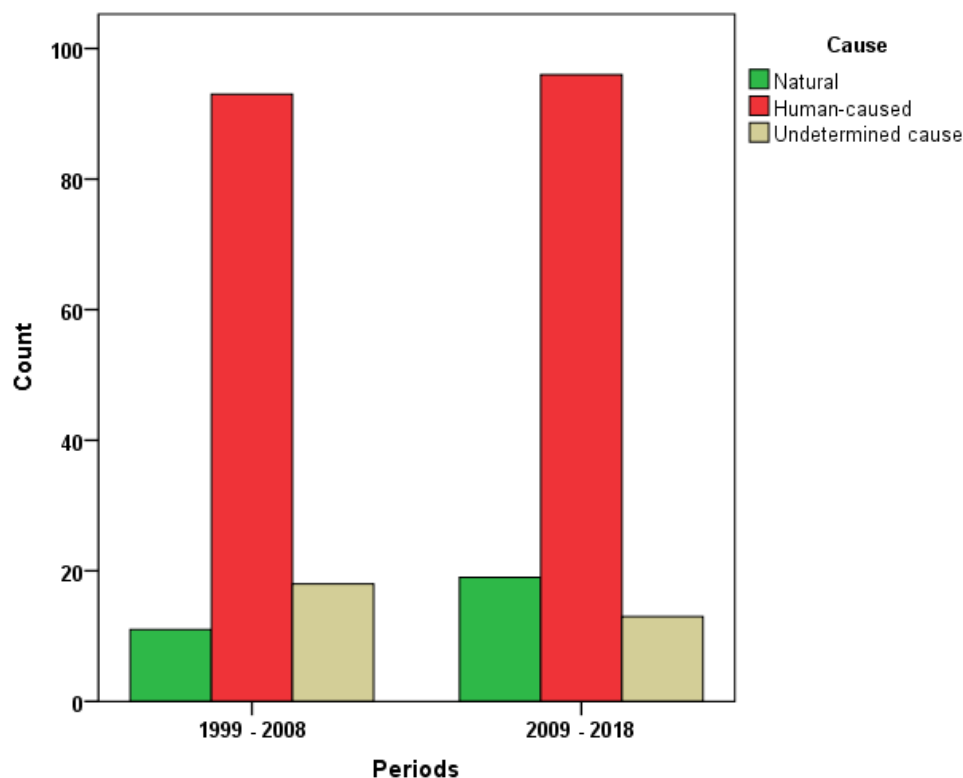
Mortality from self-defense kills 1975-2018



Mortality from livestock conflicts 1975-2018



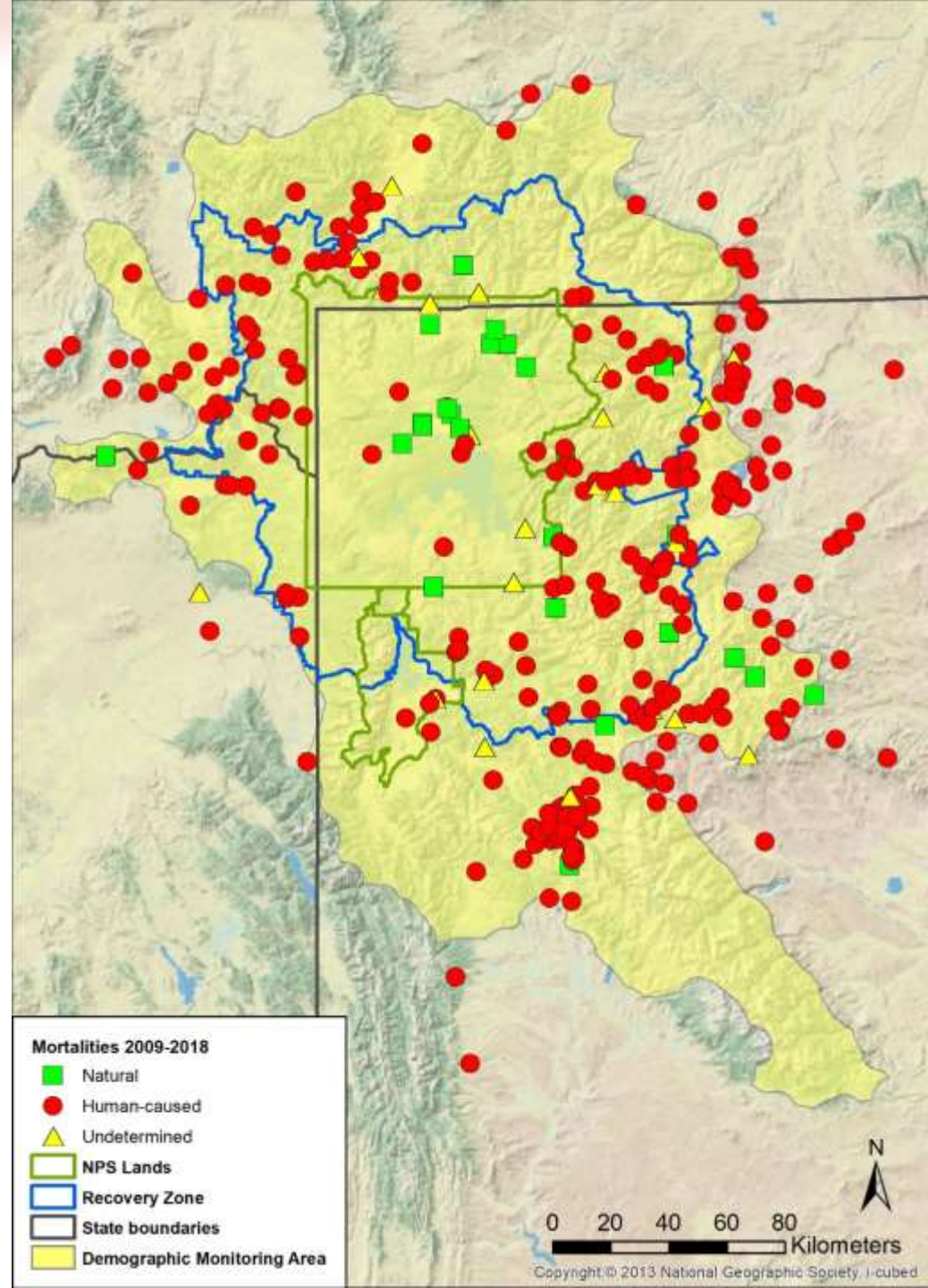
Recovery Zone mortalities by cause and category 1999-2008 and 2009-2018



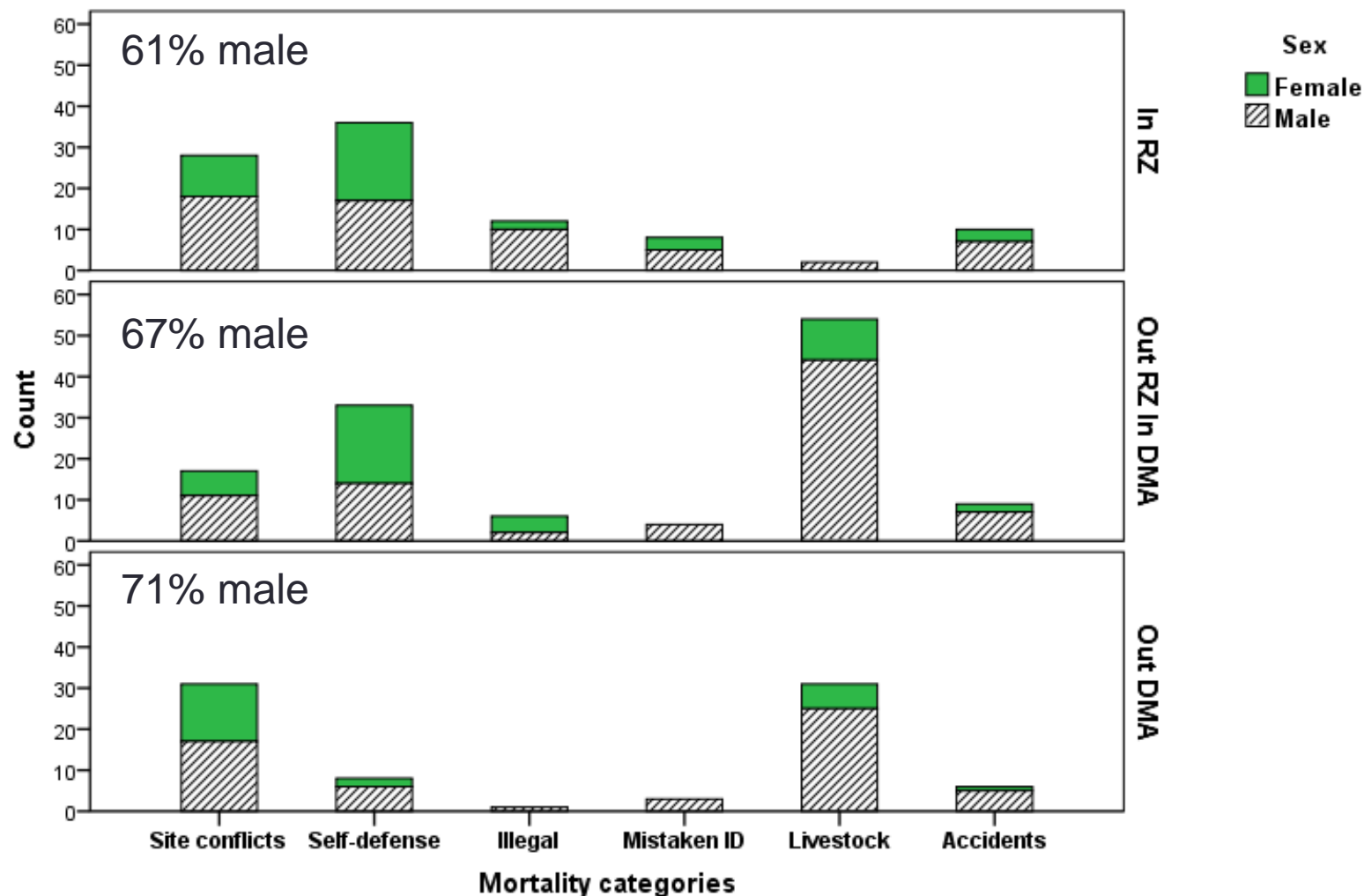
No statistical evidence of shifts

Documented mortalities 2009-2018

- 26 natural
- 299 human-caused
- 24 undetermined
- 349 total

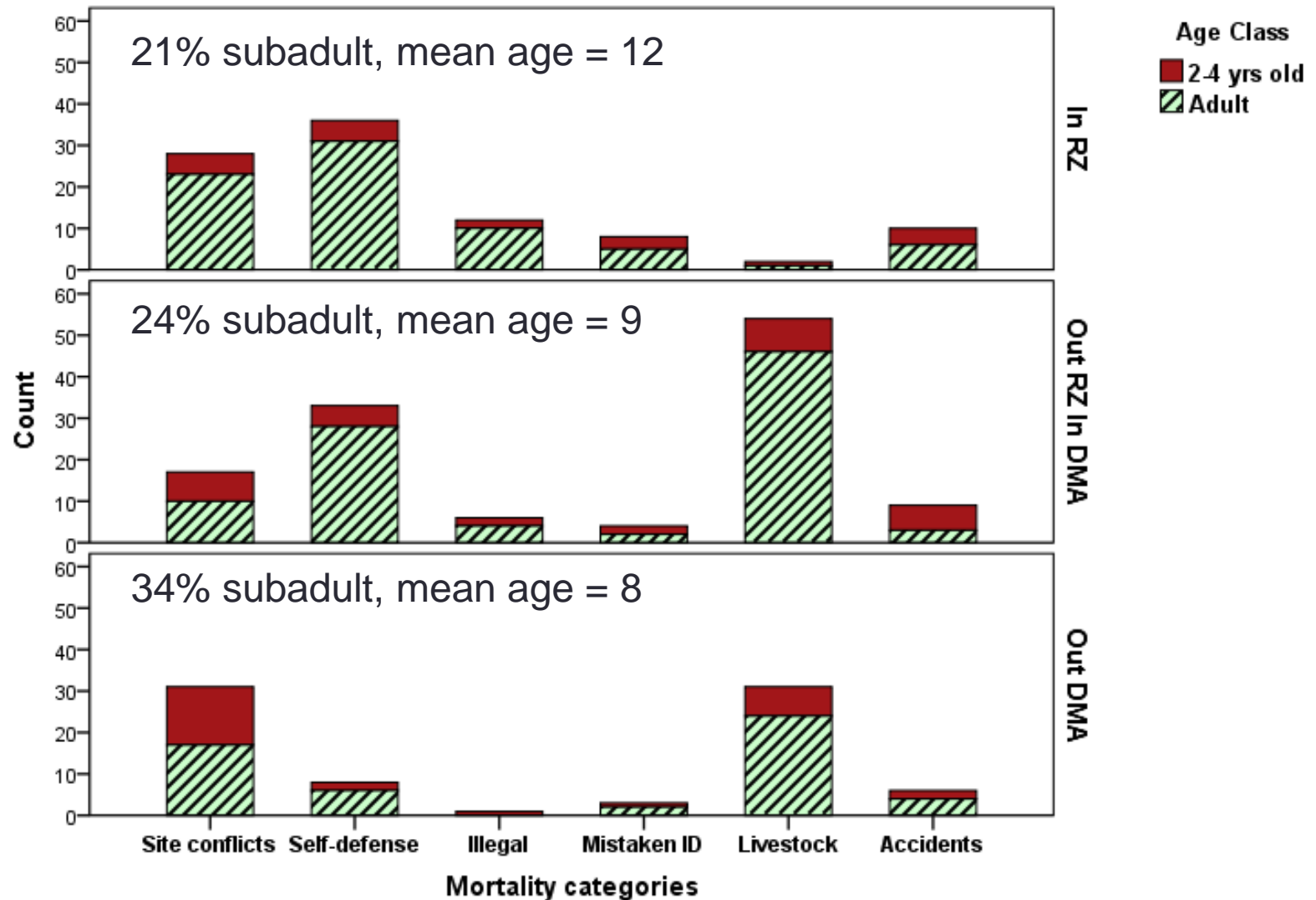


Human-caused mortalities by category and sex 2009-2018

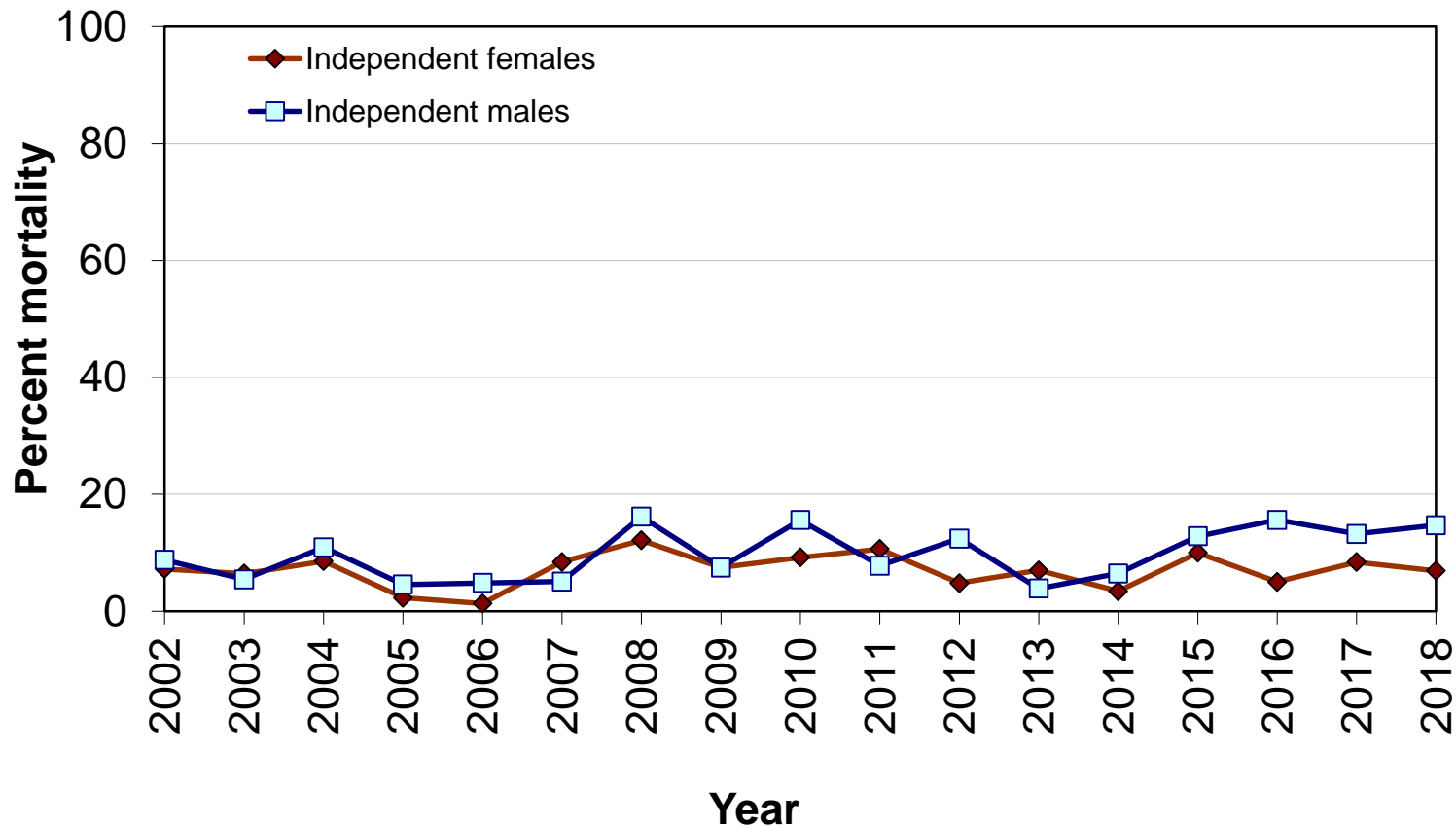


Human-caused mortalities by category and age

2009-2018



Estimated percent mortality of independent (≥ 2 yrs) grizzly bears, 2002–2018 (DMA only)



Female average = 7.0% Male average = 9.7%